

CLAIM AMENDMENTS

Please amend the claims by canceling claims 1-29 and adding new claims 30-46, all without prejudice, as indicated on the following listing of all the claims in the present application after this Amendment:

1. - 29. (Cancelled)

30. (New) A method for fingerprinting an audio waveform, comprising:
defining a codebook which represents a vector of one or more spectral properties with a code,
each code corresponding to a bin and representing a portion of an audio signal;
dividing the audio waveform into bins,
for a bin, computing one or more spectral properties for that bin,
wherein the computing comprises:
 computing the one or more spectral features for a first group of data points within the bin;
 shifting some number of data points within the bin; and
 computing the one or more spectral features for a second group of data points within the bin; and
representing the waveform with a string of hash codes from the codebook, each hash code corresponding to a segment of the waveform and temporally aligned in the string with the corresponding segment of the waveform.

31. (New) The method of claim 30, wherein data points in the first group overlap with data points in the second group.

32. (New) The method of claim 30 wherein in representing the waveform, each group of data points of the bin is represented by a code, and wherein the code for the bin may differ for each group of data points.

33. (New) The method of claim 30 further comprising:
compressing the string of codes from the codebook to form a compressed string,
the codes of the compressed string temporally aligned with the corresponding segment of the
waveform.

34. (New) A method for creating a signature for an audio waveform, comprising:
dividing the audio waveform into bins;
for a plurality of the bins, selecting a first group of data points within each bin,
and computing one or more spectral properties for each bin based upon the first group of points
within the bins of the plurality,
and for the plurality, selecting a second group of data points within each bin, and
computing one or more spectral properties for each bin based upon the second set of data points
within the bins of the plurality;
referencing a codebook; and
creating one or more signatures representing the waveform with a string of codes
from the codebook, each code corresponding to a segment of the waveform.

35. (New) The method of claim 34 wherein each code in the string represents the
waveform over a portion of the waveform, and wherein codes are temporally aligned with the
waveform such that the position of a code within the string corresponds to a time period of the
waveform.

36. (New) The method of claim 35 further comprising compressing the string such
that temporal alignment between the string and the waveform is maintained.

37. (New) The method of claim 35 further comprising comparing a signature of the
one or more signatures that initiates at a given time with a representation of an audio segment.

38. (New) The method of claim 37 further comprising defining a codebook which
represents a vector of one or more spectral properties with a code, prior to referencing said
codebook.

39. (New) The method of claim 34 wherein one or more signatures is created for each bin.

40. (New) A method for uniquely identifying a piece of music, the method comprising:

segmenting the piece of music into bins, wherein the bins are determined based upon intrinsic qualities of the music;

extracting one or more signatures of the audio sample for each bin, each signature identifying a different portion of the bin,

each signature comprising a series of codes, each code representing one or more vectors, each vector representing a spectral feature of a bin, the spectral feature determined by performing a linear transform on the bin.

41. (New) The method of claim 40, further comprising comparing the one or more signatures extracted from the audio sample with two or more segments of unidentified content.

42. (New) The method of claim 40 wherein the intrinsic qualities comprise time domain zero crossings.

43. (New) The method of claim 40 wherein the intrinsic qualities comprise the root mean square energy.

44. (New) The method of claim 40 wherein the intrinsic qualities comprise the Nth percentile frequency of the bin.

45. (New) The method of claim 40 wherein the intrinsic qualities comprise spectral energy correlation of contiguous bins.

46. (New) A method for creating a signature for an audio waveform, comprising:
dividing the audio waveform into bins;

for a plurality of the bins, selecting a first group of data points within each bin, and computing one or more spectral properties for each bin based upon the first group of points within the bins of the plurality,

and for the plurality, selecting a second group of data points within each bin, and computing one or more spectral properties for each bin based upon the second set of data points within the bins of the plurality;

referencing a codebook of hash values; and

creating one or more signatures representing the waveform with a string of hash values from the codebook, each hash value corresponding to a segment of the waveform.